

A DESCRIPTION OF THE LARVA OF
HYPOTHYCE MIXTA HOWDEN
(COLEOPTERA:SCARABAEIDAE:MELOLONTHINI)¹

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ABSTRACT

The first and second stage larvae are described and illustrated for the recently described *Hypothyce mixta* Howden, from near Garrison, Texas.

Carl Barfield, formerly a student at Nagadoches State College², has furnished to me a number of reared first stage larvae of *Hypothyce mixta* and a partly molted second instar. This makes it possible to describe the larvae of this recently described genus and species (Howden, 1968) and to compare it with larvae of the closely related genera, *Thyce* and *Polyphylla*.

Larvae of *Polyphylla* and of the 1 known species of *Thyce* (*T. harfordi* Casey) are so similar in morphological characters (Erwin, 1970) that they could be placed in the same genus. Adults of *Thyce*, however, have a 3-segmented antennal club while that of *Polyphylla* is many segmented (LeConte and Horn, 1883).

The larva of *Hypothyce* shows close affinities with the larvae of both *Polyphylla* and *Thyce* but has a strikingly different type of raster. This feature of *Hypothyce* larvae supports Howden's creation of a new genus for the species (1968).

Hypothyce larvae more closely resemble *Thyce* larvae than *Polyphylla* larvae in having more posterior frontal setae on the head and a short dexiophoba on the epipharynx. Unlike both *Thyce* and *Polyphylla*, larvae of *Hypothyce* have relatively few (8-11) preseptular hamate setae.

First-Stage Larva
(Fig. 1, 3, 4-8)

Description based on 35 first instars reared by Carl S. Barfield, summer and fall 1971, from eggs laid by females of *Hypothyce mixta* collected at Camp Whispering Pines, near Garrison, Texas.

Maximum width of head capsule (Fig. 6) of first-stage larva 2.07 to 2.25 mm, light yellow brown, fairly smooth. Dorsoepicranial setae, 1 to 3 on each side. Frons with 16 or 17 anterior frontal setae, an irregular, transverse row of 5-10 posterior frontal setae on each side, 1 or 2 exterior frontal setae on each side, and 2 or 3 setae in each anterior frontal angle. Labrum symmetrical, with a broken network of prominent brown carinae. Post-clypeus with similar but less prominent carinae. Epipharynx symmetrical (Fig. 1); epizygum, zygum, and proplegmatia absent. Haptomerum slightly raised, set with 14 to 16 heli in 2 curved transverse rows. Plegmatia well developed, each elliptical with 12 to

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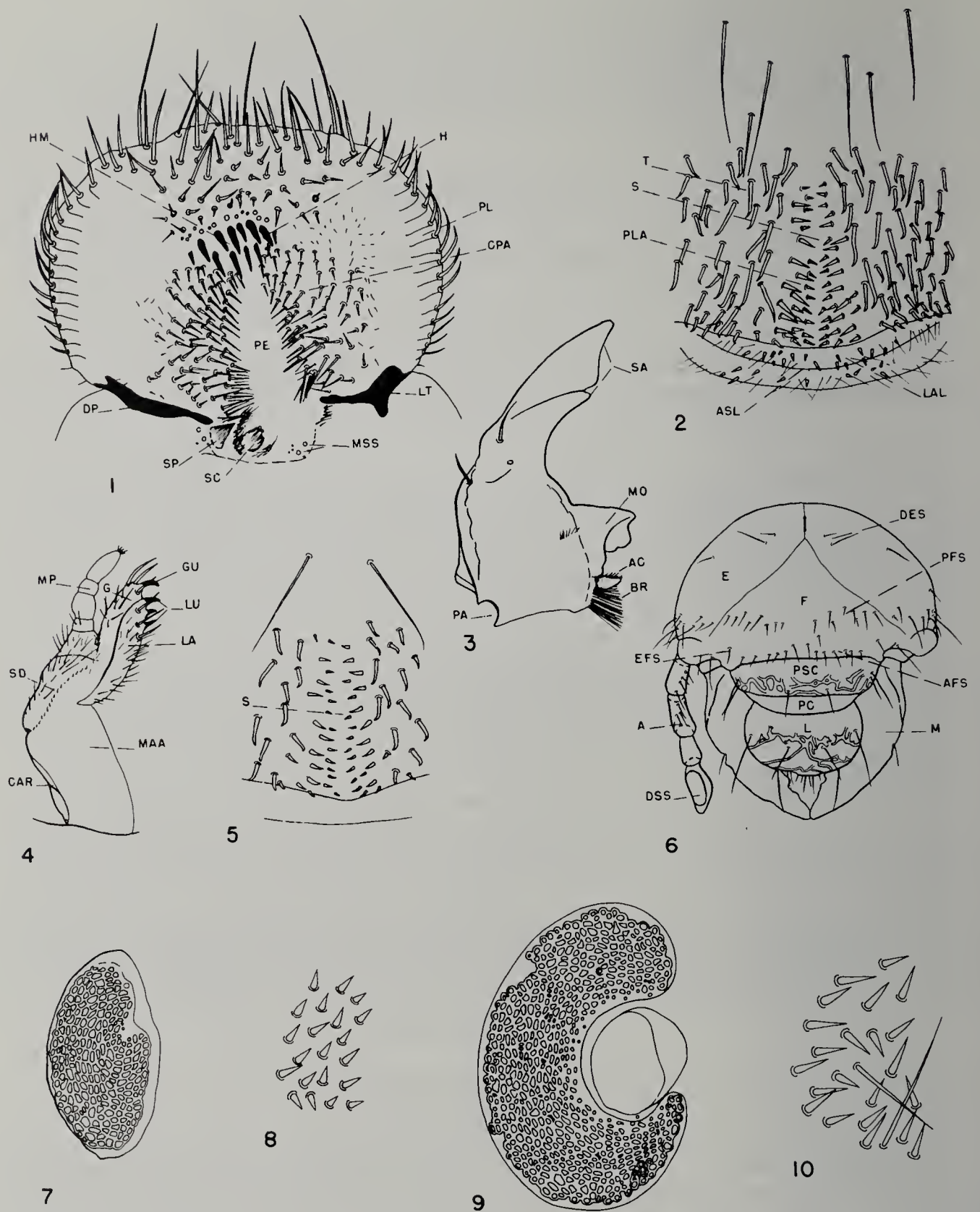


Fig. 1, 3-8: FIRST INSTAR: 1) epipharynx. CPA, chaetoparia; DP, dexiotorma; H, helus; HM, haptomerum; MSS, macrosensilla; PE, pedium; PL, plegmatium; SC, sense cone; SP, sensoryplate. Fig. 2, 9, 10: SECOND INSTAR: 2) raster. ASL, anal slit; LAL, lower anal lobe; PLA, palidium; S, septula; T—tegillar setae. 3) Mandible, AC, acia; BR, brustia; MO, molar area; PA, preartis; SA, scissorial area. 4) maxilla. CAR, cardo; G, galea; GU, uncus of galea; LA, lacinia; LU, unci of lacinia; MAA, maxillary articulating area; MP, maxillary palpus; SD, stridulatory teeth. 5) raster. S, septula. 6) head. A, antenna; AFS, anterior frontal setae; DES, dorsoepicranial setae; DSS, dorsal sensory spot; E, epicranium; EFS, exterior frontal seta; F, frons; L, labrum; PC, preclypeus; PFS, posterior frontal setae; PSC, postclypeus. 7) Left thoracic spiracle. 8) Typical setae of second dorsal fold on second abdominal segment. 9) Left thoracic spiracle. 10) Typical setae of second dorsal fold on second abdominal segment.

17 plegmata. Chaetopariae each with a dense covering of medially directed setae; sensilla absent. Dexiophoba fringing basal half of pedium; small laeophoba anterior of medial end of laeotorma. Haptolachus with thin, triangular sclerotized plate (nesium externum) and sense cone surrounded by numerous setules. Region anterior of crepis and mesad of 2 macrosensillae with 3 microsensillae. Tormae separate, asymmetrical; dexiotorma with well developed pternotorma.

Mandibles (Fig. 3) elongate with black scissorial and molar area. Dorsomolar region of left mandible with a row of 5-11 setae. Maxilla (Fig. 4) with galae and lacinia fused at base, tightly fitted together apically. Lacinia with 3 unci in a longitudinal row. Maxillary stridulatory area with sparsely set row of 14 to 17 short, sharp, subconical teeth. Antenna 4 segmented, shorter than mandible; last segment broadly elliptical, wider than segments 1 to 3; with a large elliptical, dorsal, sensory spot.

Spiracles reniform, bullae absent, with slightly concave respiratory plates. Respiratory plates with irregular rows of subquadrate "holes" (Fig. 7). Spiracles of abdominal segments 7 and 8 slightly smaller than those of 1-6.

Legs 4 segmented. Prothoracic and mesothoracic legs with sharp pointed falcate claws; claws of metathoracic legs much smaller. Each claw with 2 prominent setae.

Abdominal segments 1-6 each with 3 dorsal lobes covered with numerous short, stout subconical setae (Fig. 8). A few very long slender setae found posteriorly among the short setae on lobes 1 and 2. Segment 7 with dense short setae only on fold 1; fold 2 with scattered long and short slender setae.

Raster (Fig. 5) with 2 palidia, each consisting of several sparsely set, irregular rows of subconical, mesally directed setae; some with bent tips. Each palidium triangular with 23-31 pali arranged in 1 or 2 irregular rows anteriorly and widening to 3 or 4 irregular rows posteriorly. Septula long and narrow, almost obsolete. Tegillum with numerous long strap-like setae, curved at tips. Preseptular tegillar setae 8 to 11. Anal slit broadly curved, lower anal lobes covered with many slender setae and a few short stout, conical setae.

Second-Stage Larva (Fig. 2, 9, 10)

Description based on 1 second instar reared from an egg of *Hypothyce mixta* laid by female no. 1, collected at Camp Whispering Pines, near Garrison, Texas, by Carl S. Barfield. Larva preserved 25-X-1971 when molt skin of 1st instar was in the process of being shed.

Setation of head, carinae of frons and postclypeus, epipharynx, mandibles, and maxillae as in first instars.

Spiracles C-shaped, with bullae (Fig. 9). Thoracic spiracle with posterior emargination of respiratory plate; abdominal spiracles with anterior emarginations of respiratory plates. Thoracic spiracles slightly larger than abdominal spiracles; abdominal spiracles similar to each other in size.

Lobes of respiratory plates of thoracic spiracle slightly constricted; respiratory plates of abdominal spiracles not constricted or slightly constricted. Respiratory plates with numerous circular to subquadrate "holes" not arranged in definite rows.

Setation of dorsal folds of abdomen (Fig. 10) as in first instar, except setae are longer and more numerous. Raster (Fig. 2) with 2 palidia of 27 to 28 short

to moderately long, straight, sharp-pointed pali. Each palidium with pali arranged anteriorly in a single irregular row and posteriorly widening to 2 or 3 irregular rows. Septula long and narrow.

LITERATURE CITED

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HOMAEOTARSUS DESPECTUS LeCONTE FROM MEXICO

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Homaeotarsus despectus LeConte was originally described from Louisiana (LeConte, 1863, *Smithsonian Misc. Publ.* 167:45). Horn (1885, *Trans. Amer. Ent. Soc.* 12:90) reported it from Florida. Casey (1905, *Trans. Acad. Sci. St. Louis* 15:40) added Brownsville, Texas to the known distribution. A male specimen from Zihuatanejo, Guerrero, Mexico, 15-IX-1966, R. H. Crandall, is identical with specimens in the collection of the University of California at Riverside from Gainesville, Florida sent to us by C. W. O'Brien. It is easily known as the only U. S. species with the apices of the elytra narrowly testaceous. Specimens of *despectus* answer perfectly to Sharp's brief description of *H. apicipennis* (1885, *Biologia Centr. Amer.* p. 526) from southern Mexico, Guatemala, and Nicaragua. The types of the 2 species should be compared to determine the status of the latter.